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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/812,369 | 03/29/2004 | Dean M. Homan | 24.0852 | 2903 |

23718 7590 10/30/2006

SCHLUMBERGER OILFIELD SERVICES
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EXAMINER

LEDYNH, BOT L

| ART UNIT | PAPER NUMBER |
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2862

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/812,369 | Applicant(s) HOMAN ET AL. | |
| | Examiner Bot LeDinh . | Art Unit 2862 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 15, 16 and 19-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>8/17/06; 7/29/05; 3/29/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's election with traverse of group I, subspecies of Fig. 7 in the reply filed on 08/23/06 is acknowledged. The traversal is on the ground(s) that the embodiments are not material different and each adds specific limitation to the invention of claim 1.

This is not found persuasive because applicant traverses on the ground(s) that the embodiments are not **material different** and does not traverse on the ground that the species are not **patentably distinct** as required in the restriction requirement. Moreover, Applicant argues that each embodiment adds specific limitation to the invention of claim 1. This is also found not persuasive because the requirement of election of species is still proper although there is a claim generic to all species.

Notwithstanding the above Examiner's opinion, the Examiner agrees with the Applicant's election of claims 1-14, and 17-18, which election implies three patentably distinct species: species I (cavity in the body), species II (cavity on an extendable section), and species III (cavity on a protruding section). This characterization is proper; therefore, the Examiner revises the election of species requirement to the extent that there are three patentably distinct species, namely species I (cavity in the body), species II (cavity on an extendable section), and species III (cavity on a protruding section).

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 11-12, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bittar (6476609B1) in view of Amini (6975120) or Frey et al (6727705) or Chemali et al (6957708). Bittar discloses substantially the same invention (transmitter antenna 16 and 18 and 20, receivers 22 and 24; transmitters and receivers being mounted in recesses and covered with insulation --see col.7 lines 1-25; tilting -- see fig.7; etc.) as claimed, except for a receiver disposed at a distance less than six inches (or two inches) from the transmitter. However, Amini (or Frey et al) discloses that spacing between transmitters and receivers is proportional to the depth of penetration or investigation (see col. 13, lines 18-34); Chemali et al (6957708) discloses that distance between transmitters and receivers is less than six inches (or two inches) for providing greater flexibility of the use of the small sized antenna, distinguishing of suitable ranges, and avoiding unnecessary ambiguities of measurements (see col. 7, lines 19-29). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bittar by disposing a receiver on the body at a distance less than six inches (or less than two inches) from the transmitter in order to provide greater flexibility of the use of the small sized antenna, distinguish suitable ranges, and avoid unnecessary ambiguities of measurement as taught by Chemali et al; in addition, a distance less than six inches (or less than two inches) between the transmitter and receivers is also a matter of design choice, depending on the depth of penetration needed as taught by Amini or Frey et al.

Claims 6-14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bittar (6476609B1) in view of Amini (6975120) or Frey et al (6727705) or Chemali et al (6957708) as applied to claims 1-5, 11-12, 17 above, and further in view of Omeragic (20030055565). Bittar (6476609B1) in view of Amini (6975120) or Frey et al (6727705) or Chemali et al (6957708) disclose substantially the same invention as claimed, except for the receiver and/or the transmitter comprising a tri-axial antenna system, the receiver and/or the transmitter comprising two antenna with axes substantially orthogonal to one another, the receiver and/or the transmitter comprising an antenna with its axis substantially aligned with the longitudinal axis of the elongated body, and the receiver and/or the transmitter each comprising an antenna perpendicular to (or aligned with) the body. Omeragic discloses such claimed limitations, e.g., tri-axial antenna system, in order to determine various subsurface formation parameters from EM measurements including antenna couplings associated with the measurements (see Figs.1-2 and summary of the invention). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bittar (6476609B1) in view of Amini (6975120) or Frey et al (6727705) or Chemali et al (6957708) by employing the receiver and/or the transmitter comprising a tri-axial antenna system, the receiver and/or the transmitter comprising two antenna with axes substantially orthogonal to one another, the receiver and/or the transmitter comprising an antenna with its axis substantially aligned with the longitudinal axis of the elongated body, and the receiver and/or the transmitter each comprising an antenna perpendicular to (or aligned with) the body as

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taught by Omeragic in order to determine various subsurface formation parameters from EM measurements including antenna couplings associated with the measurements.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Bot LeDynch whose telephone number is 5712722231. The Examiner normally does not work on Fridays. The examiner can normally be reached on Maxiflex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 5712722180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BL/ 2006



Bot LeDynch, J.D., Ph.D., D.A.
Primary Examiner